CASES OF LOCOMOTOR ATAXIA.*

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THE following cases are of interest on account of unusual symptoms, or on account of the marked remissions in their course. The clinical history is not so complete in one or two as could be desired.

CASE I.—The first case is one of severe gastric crises without other prominent symptoms. I saw the patient, a man about fifty years old, in the summer of 1881. His account of himself was, that he had had gastric derangement at intervals for twenty years or so. The disturbance showed itself in severe attacks of flatulence attended with such pain that several times he had been laid up and obliged to keep his bed. The distress was chiefly in the right side; the attacks began suddenly without any apparent cause. There was no tenderness anywhere. Sometimes he had nausea, rarely vomiting. He had had no pain in his feet or legs, and was conscious of no numbness. Patellar tendon reflex was entirely lost.

This patient was extremely nervous, and I could not give him quite as thorough an examination as I should have liked. I made no attempt to examine his eyes. The case is interesting from the extreme violence of the gastric symptoms, to which no words can do justice. There was, however, very little vomiting.

The next case is of interest from the restriction of respira-

* Read before the American Neurological Association, 1883.

tion. I have seen this in one other patient. The attacks recalled laryngeal spasm, but there was no cough. The sensation was probably an unusual form of the girdle sensation.

CASE 2.—Mr. E. L. G. was seen July 5, 1882. He said he had been ailing fifteen years with trouble in his spine. At first he had pain in his chest one morning, when he sat leaning over. On trying to rise, he could not rise upright; he felt a contraction in his chest which "shut his wind off." When he tried to work, he got this contraction in his chest. Sometimes, instead, he had a stiff neck or headache. For several years he had had a pain in his legs, most in left leg, from knee to ankle—a tired, nervous pain just inside and behind tibia. The pain in right leg was less. There was no numbness that he was aware of. Sometimes, during the aching, the leg would twitch. If he walked much his legs gave out; he could not lift his toes, and he had to put his foot down all at once.

There was some hyperæsthesia of both legs below the knees. Patellar-tendon reflex was absent. There was no inco-ordination.

Diabetes associated with occipital pain is the combination of symptoms which attract attention in the next case.

CASE 3.—Mr. P., æt. fifty, was seen in consultation with Dr. Hildreth. He had lived a rather rough life, but had never drank spirits, and had never had syphilis. He had had sick headaches for many years. About seven years previous he had had severe neuralgia in the occipital and trifacial nerves. Some of these attacks were very severe. A short time after these attacks of pain sugar was discovered in the urine by Dr. Hildreth, the sp. gr. ranging from 1035 to 1050. The amount was never excessive. About a year before I saw him he began to have pain in his legs; this pain was lancinating, momentary, and severe. After several months there was hyperæsthesia of the legs, which later became excessive, and with the pain tortured him much. There was no girdle sensation. When seen there was found to be less acute sensibility in the left foot and right leg than in their mates. Tendon reflex was gone.

There appeared a burning sensation in the legs, which the patient spoke of as frying; this gave him much distress.

Nitrate of silver was used for a time; morphia and later codeia

controlled pain and diminished the amount of sugar. Actual cautery to back was of service, seeming to diminish the frying in the legs. At length the sugar dissappeared from the urine; the pains became less severe, though they did not entirely cease. When last examined the tendon reflex was still absent.

Deafness has been seen only a few times in locomotor ataxia. Erb reports a case in *Ziemssen's Cyclopedia;* other cases have been reported. Sometimes the deafness is unilateral, sometimes it is only partial. The following case was a very striking one, and the deafness was such that the voice could not be heard. Probably the lesion is similar to that found in case of atrophy of the optic nerve.

CASE 4.—Mr. J., æt. fifty-three, was sent to me Oct. 26, 1882, by Dr. C. J. Blake, with a note, saying that the condition of the ears would not account for his deafness.

About eight years ago he sat with his back against a brick wall in a cold building. After that he had rheumatism, most in the knees; then it would skip about in feet, ankles, back, neck, and head. The pains would seize him in his feet and knees, and he wanted to move his feet about constantly; it would last only a short time; would then go, to reappear elsewhere. This pain had been increasing in severity, and in the frequency of attacks.

He had had dizziness and headaches, but these did not occur together. About a year ago he was on the street, had a dizzy spell, and thought he should fall, but did not; after the attack he found he was partially deaf in both ears, the right worse; this deafness gradually increased until he could not hear the voice. After the deafness he had less dizziness, and in some respects has felt better. He has tinnitus occasionally, not constantly.

He is weak in his legs, and has not much sensation in the left knee. The left leg and foot are a little less sensitive than the right, and the plantar reflex is less on the left. Tendon reflex is entirely gone. He says he is afraid at times that he staggers, but does not know whether he does or not. The hands are less sensitive than natural; he cannot tell a dull from a sharp point in either hand.

His eyes move naturally, pupils react to light, the right is the larger; face and tongue move naturally.

In the remaining cases either the patellar reflex was not lost, or returned, or at least a temporary remission was obtained.

CASE 5.—A. C. G., æt. thirty-seven years, seen Aug. 2, 1881. Does not stand much on his feet. Had syphilis seven years ago. Has not been exposed to cold or wet. Seventeen to eighteen years ago he had cold feet and pain through the hips on both sides. This pain did not shoot down his legs, and was different from the pain he had lately felt. About twelve years ago he had trouble with his eyes from proof-reading, none since. Six to seven years ago he had pain in his right ear, and has had more or less discharge from that ear. The pain was very severe. Dr. Blake said there was inflammation. A short time after this he had pain in the back of his head, which was severe till two years ago. During the last three years he has had severe shooting-pains in his legs, at times very severe. At first it was in the back part of the thigh. Two years ago it affected the instep ; now it is more general, not more severe. It is increased by bad weather, or by the sudden clearing off of a storm. The pain does not interfere with his walking, and he is not conscious of loss of power. Without cause, so far as he knows, he sometimes cannot walk straight. He has no sense of dizziness.

Two or three years ago his hands would at times be numb, with a slight pricking sensation. Three or four weeks ago he felt this again ; and his handwriting then looked unnatural. There is no numbness in the feet, but during the pain his legs are extremely sensitive.

There was no unsteadiness in his walk, even with his eyes shut. The left pupil did not respond to light ; it did move to accommodation (Argyle Robertson's symptom); it was wider dilated than the right. Eyesight seemed good. Ophthalmoscope showed no change. There was no tremor of facial muscles or of hands.

Patellar-tendon reflex was present, normal, in both legs.

Considering the combination of symptoms, the pain, the hyperæsthesia, the anæsthesia, the pupillary symptoms, and the occasional unsteady gait, I think the diagnosis of locomotor ataxia is justifiable. The case, then, is of interest, as being one in which the patellar-tendon reflex was not lost.

CASE 6.—Mr. R., æt. forty-four years, was seen in 1877. He had been under treatment with Dr. Derby, for about two years, on account of failure of sight. There was atrophy of the optic nerve. He had had pains in his legs for five or six years, which followed the course of the sciatic nerve to the knee, or beginning in the knee ran down to the foot. These attacks would last two or three days, sometimes so severe as to prevent walking for a minute, sometimes they would keep him awake at night. During three or four years he had these attacks every two to four months; earlier they were less frequent.

During two years he had had some failure of power in walking, and had had a sense of numbness, or as if asleep, in his hands and feet. Sometimes there had been a very slight staggering. There was sometimes a slight jerking of the legs at night. Sensation was somewhat diminished in the calves of the legs, and over hands and feet there was a sensation as if they were covered with a thick skin.

He did not show evidence of inco-ordination, walking fairly well with his eyes shut. He had to urinate often.

The galvanic current was used to his back; he was given ergot and nitrate of silver alternately. In three months he reported that he had less severe pain, and the attacks were less frequent and of shorter duration.

He went to California, to avoid the winter weather, and, on his return, five months later, reported that he was stronger; had had only one severe attack of pain after exposure to cold and wet. There had been no jerking of the legs at night, the sensation in calves had improved; on first examination he could feel two points, as such, only at a distance of two and a quarter inches, on return from California, at a distance of one inch.

Until now no examination of tendon reflex had been made. It was found present in both legs to a moderate degree, stronger in left than right.

The last I heard of this patient, two or three years ago, he was free from pain and able to attend to business, feeling strong and well. Of course, the atrophy of the optic nerve remained.

It is impossible to tell whether the patellar-tendon reflex was gone when he was first examined, and returned, or whether this is one of those rare cases, like the last, in

which that reflex was not lost. The disease was checked; most of the symptoms disappeared, and had not returned for three or four years.

CASE 7.—John M. B., 'longshoreman, æt. forty-six, entered City Hospital Nov. 27, 1882. Early history unimportant, excepting he had no syphilis; was a steady drinker, taking four or five drinks daily; he had worked where his feet were wet most of the time. For the last month he has had darting pains in his feet and calves; frequent cramps in his legs; numb feelings; diminished sensation in the calves, and tenderness along the tibia. His knees often give way, so that he has several times fallen. Frequent blurring of eyesight.

There was found considerable diminution of sensation to both touch and pricking in calves, with slight delay in transmission; less diminution over tibia. Sensation in feet more acute; excessive reflex on tickling soles of feet; no ankle clonus; considerable stiffness of legs; cremaster reflex present on both sides, but not very marked; abdominal reflex very slight, sometimes absent; entire absence of patellar reflex; there was considerable tremor of hands, not increased by motions that require a little care in execution; this ceases when the hands are at rest. There was a decided ataxic gait; with his eyes shut, he threw his feet about with the greatest irregularity, crossing them spasmodically. Great inco-ordination of hands; not able to touch nose with fingers if eyes are shut.

Dec. 4th.—Dr. Williams reports as to eyes: arteries very small; veins relatively enlarged, but about of normal size; disc not atrophied; vision and field good.

Dec. 30th.—A lack of equality in pupils was noticed, the left being much the larger, reacting vigorously to light; the right reacted very little to light.

He received one third of a grain of nitrate of silver, three times a day for about five weeks, and was galvanized along the spine.

Jan. 31st to Feb. 3d it is recorded that his pain diminished very decidedly; sensation improved, though it did not become quite normal. The inco-ordination of hands almost entirely gone; he walked fairly well, and stood well even with his eyes shut. Tendon reflex was well marked.

March 17th.—He was discharged.

The next case is one of unusual interest, on account of the rapid development of the symptoms, and the patient's improvement on removing him from the cause which gave rise to his illness.

The case is not presented as one of typical locomotor ataxia as usually seen, which runs a long and chronic course, yet there were present the symptoms which, when combined, we consider as characteristic of the disease.

Perhaps it may be looked upon as an acute case, and therefore more likely to show remission; but the cause operating again and again, the changes in the cord became more extensive and perhaps more permanent. Certainly the symptoms during the last attack were much more severe than during either of the others.

CASE 8.—James H., boiler-maker, entered hospital first Feb. 2, 1882, under Dr. Edes, to whose kindness I am indebted for the privilege of using the earlier records of the case. He had been generally well, had been in hospital once for a bronchial trouble, and once on account of fractured ribs. When at work he sits or lies on his back inside the boiler on cold iron subject to jar from blows on the outside. One year before entrance in February, 1882, he noticed a numbness of his feet, which continued afterward, and during the last three months had been accompanied with lancinating pains. There was also numbness in the lower lumbar region, extending to his hips. He had difficulty in walking, and for six weeks had been unable to walk in the dark. There was a feeling as if a thick carpet was between his feet and the floor. There was no numbness, pricking, or loss of strength in his arms. No pain in head, and no disturbance of vision.

There was found on examination to be marked anæsthesia of the soles and dorsum of feet and lower part of legs. He could not stand with his eyes shut. There was absence of patellar tendon reflex. The eyes were examined by Dr. Edes. In right eye there were some whitish streaks along the veins of disc and at outer edge of disc. Strong venous pulsation. Whole fundus was deeply pigmented. In left eye appearances were about the same, except a tolerably distinct white crescent at outer edge of disc; venous pulsation well marked.

He slowly improved, the pains disappeared, the sensation returned, he could walk well, could stand with his eyes shut, and on March 3d, a slight but distinct tendon reflex was present. He was discharged.

He went back to his work as boiler-maker, but worked less on inside of boiler. He worked till April 1st, then was obliged to give up, and entered the hospital April 7th. The symptoms were much the same as before, only less severe. There was decided anæsthesia of both feet, especially along the outer border and on the toes. Tendon reflex was barely perceptible.

He again improved, the tendon reflex becoming stronger, sensation returning, and May 7th he was discharged.

He entered the hospital again June 5th, with some of his old symptoms, and was discharged June 12th. Of this stay in hospital there is only a very brief record.

He entered again January 6, 1883. He had worked at blacksmithing until within three months, when he went back to his old work, working inside the boiler lying on his back. Up to six weeks he had no return of his old symptoms, being able to stand steadily with his eyes shut, patellar reflex being always present. Six weeks ago he began to have a return of numbness and pricking in his feet, with sharp shooting pains. He could not feel the floor well under his feet, and staggered a good deal in walking in the dark. He was easily fatigued; could walk only a short distance without stopping to rest. Feet were numb and cold. He had pain in the small of the back, and an occasional girdle sensation during the last week. There was also a feeling of numbness in his hands, so that he often dropped his tools in working. He had a slight headache for ten days. Vision he thinks was as good as ever; there was no diplopia. He had had dyspnœa and palpitation on exertion for a few weeks. He gave up work three weeks before entrance.

On examination there was found considerable inco-ordination of both legs and hands; diminished sensation to touch in feet and hands. A little more plantar reflex in right leg than left; entire absence of patellar reflex. Pupils were very contracted; responded very imperfectly to light; responded to accommodation.

Feb. 29th, there was a slight patellar reflex. He had gained control over his legs and hands to a great extent; he walked well with his eyes shut, and stood fairly steady. He was discharged March 7th, saying he felt as well as ever; the inco-ordination had disappeared. Patellar reflex was present, but not so strong as it often

is in health. On that day, Dr. Wadsworth examined his eyes and noted: pupils abnormally small, so that there is a darkish tinge to the disc and vessels: narrow crescent to outer side in each eye; nothing else abnormal.

This patient has had a curious history. The combination of symptoms is similar to that found in locomotor ataxia, though the duration is short; anæsthesia, lancinating pains, inco-ordination of both legs and hands, girdle sensation, absence of patellar reflex and pupillary symptoms; yet there were repeated intermissions, one of six months' duration, in which he was able to do laborious work, and seemed to be well. Having acquired a knowledge of his symptoms while in hospital, he examined himself as to his ability to walk and stand with his eyes shut, and as to the presence of patellar reflex. During the six months' intermission, his condition was normal in these respects; yet it is to be noticed that on the last admission there had been a decided advance in the disease as compared with his condition in February, 1882.

As to treatment—rest in bed was almost the only means used. No medicine likely to influence the disease was employed.

The first five cases are chiefly of interest on account of unusual individual symptoms, and sufficient has been said in regard to those. The last three cases and case 3 are of further interest as regards the prospect of improvement, whether great benefit or cure may ever be expected in locomotor ataxia. Mr. R., case 6, may be considered as virtually cured. He so considered himself; he remained free from all symptoms of the disease up to the last time he consulted me in regard to whether a certain course would be prudent for him; this was three or four years after I first saw him. It can hardly be doubted, that if the last patient had not gone back to his business of boiler-maker he might have

continued well at least for months or years, perhaps, would have had no recurrence. Case 7 was not well when he left the hospital, but had very much improved. How long this will last, of course cannot be known. Case 3 was also very much benefited by treatment.

A. Eulenberg (*Berlin. kl. Woche.*, No. 1, 2, 1883) has lately reported three cases of cure out of 300 patients. The cure was shown by the entire disappearance of all typical symptoms for several years; yet, in each of the three, slight paræsthesia remained. He used nitrate of silver, galvanism, and hydro-therapy. Each of his three cases was treated chiefly by one of these methods; the nitrate being used in two. He recommends, finally, the subcutaneous injection of a silver albuminate.

The treatment must be undertaken early in the disease if benefit is to be expected. I have seen many patients who were somewhat relieved in the earlier stages, but the older cases rarely obtained much benefit, yet, case 3 had had the pains seven years and was much helped. Of the other three cases which gained much, case 6 had been ailing five or six years; case 7 had noticed the first symptoms only a few months before he came under observation; case 8, only a year before his first entrance into hospital. It is reasonable to think that, when the symptoms develop rapidly the prognosis is more favorable.

We might question whether Eulenberg's patients were cured by the treatment, seeing they were each treated differently, or whether each method of treatment has its advantages in certain cases, or whether they simply recovered irrespective of treatment.

It has seemed to me, however, that the nitrate of silver is of real advantage, and has relieved many patients; besides this, galvanization of the spine, cautery, or dry cupping, have seemed to me to be of great benefit; but it is not my purpose to dwell particularly upon treatment.